

**REMARKS**

As a preliminary matter, in the Office Action mailed December 3, 2004, the Examiner did not attach an initialed copy of the PTO-1449 form, Page 2 of 2, references that were mailed to the PTO on October 10, 2003. As such, applicant respectfully requests that the Examiner indicate that these references have been considered and made of record.

Appl. No. 09/910,583  
Amendment dated April 4, 2005  
Reply to Office Action of December 3, 2004

**Elections/Restrictions**

Applicant affirms the election of the Group I, Claims 1-19.

**Claim Rejections – 35 U.S.C. § 103**

The Examiner has rejected claims 1-7, 9-13, 18 and 19 under 35 USC 103(a) as being unpatentable over KR 2001055915 (KR 915) in view of EP 843348 (EP 348). The Examiner has rejected claims 8 and 14-17 under 35 USC 103(a) as being unpatentable over KR 915 in view of EP 348 as applied above, and further in view of EP 1139403 (EP 403). The Applicant respectfully traverses. The cited references, either individually or in combination, fail to anticipate or render obvious all of the elements of the Applicant's claimed invention. In particular, the cited references fail to teach the element of independent claim 14 of *"stabilizing individually the flows of the silicon, oxygen, boron and phosphorous sources prior to providing the sources into the reaction chamber."* In contrast, EP 403 stabilizes the gas mixture **ratio** before introducing the gas mixture into a reactor and not, as claimed by the Applicant, stabilizing the gas flow prior to providing the gas sources into the reaction chamber. KR 915 and EP 348 also fail to teach this element.

The cited references, individually or in combination, also fail to anticipate or render obvious the element of independent claim 18 of *"injecting the silicon, oxygen and boron sources into the reaction chamber while delaying injecting the phosphorous source in the reaction chamber for a predetermined period of time to deposit a boron-rich silicate glass film over the nitride layer, the predetermined period of time selected relative to the desired nitride layer consumption during a subsequent anneal."* The Examiner stated that "[a]s to the claims requiring an amount of time for which a phosphorus source is not introduced in the chamber, this clearly depends on the desired thickness to the BSG layer, deposition rate, etc (see EP 348 at page 30, lines 17 – 20), therefore, it would have been obvious to have adjusted the amount of time phosphorus source introduction is delayed to values in the claimed range so as to achieve the desired BSG thickness prior to forming the BPSG film." But, none of the

cited references, and in particular EP 348, teach a predetermined period of time to deposit a boron-rich silicate glass film selected relative to the desired nitride layer consumption during a subsequent anneal. Additionally, EP 348 teaches recipes for forming a BSG or BPSG layer individually and not a BPSG layer formed over a BSG layer where the BSG layer serves as a barrier to the phosphorus during an anneal to prevent the consumption of the nitride layer by the phosphorous. Therefore, the recipes for the BSG or BPSG layers in EP 348 would not be obviously applicable to the Applicant's claimed process having a predetermined period of time to deposit a BSG film selected relative to the desired nitride layer consumption during a subsequent anneal.

Therefore, the Applicant respectfully submits that the cited references fail to teach the independent claims 13 and 18 and the claims that depend upon and incorporate the limitations of the independent claims.

**Petition for Extension of Time Pursuant to 37 C.F.R. 1.136(a)**

Applicant respectfully petitions pursuant to 37 CFR 1.136(a) for a one-month extension of time to file this response to the Office Action mailed December 3, 2004. The extended period is set to expire on April 3, 2005. A check in the amount of \$120.00 is enclosed to cover the fee for a one-month extension of time.

Pursuant to 37 CFR 1.136(a)(3), applicant(s) hereby request and authorize the U.S. Patent and Trademark Office to (1) treat any concurrent or future reply that requires a petition for extension of time as incorporating a petition for extension of time for the appropriate length of time and (2) charge all required fees, including extension of time fees and fees under 37 CFR 1.16 and 1.17, to Deposit Account No. 02-2666.

Appl. No. 09/910,583  
Amendment dated April 4, 2005  
Reply to Office Action of December 3, 2004

If there are any additional charges, please charge Deposit Account No. 02-2666.

Respectfully submitted,

BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN

Date:

4/4/05

HM Molleur

Heather M. Molleur  
Reg. No. 50,432

Patent Counsel  
Legal Affairs Dept.  
APPLIED MATERIALS, INC.  
P.O. Box 450A  
Santa Clara, CA 95052

Telephone inquiries to:  
Heather M. Molleur  
(408) 720-8300